



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0665; Project Identifier AD-2021-00270-T]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive (AD) 2017-23-02, which applies to certain The Boeing Company Model 737-200, -200C, -300, -400, and -500 series airplanes. AD 2017-23-02 requires repetitive inspections, replacement, and applicable on-condition actions for certain fuselage crown skin panels. Since the FAA issued AD 2017-23-02, certain airplane configurations and inspection locations have been revised and additional airplanes have been determined to be subject to the unsafe condition. This proposed AD would retain the actions in AD 2017-23-02, revise certain airplane configurations and inspection locations, and add airplanes to the applicability. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0665.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0665; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: James Guo, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5357; fax: 562-627-5210; email: james.guo@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-0665; Project Identifier AD-2021-00270-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this proposed AD.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to James Guo, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5357; fax:

562-627-5210; email: james.guo@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

Fatigue damage can occur locally, in small areas or structural design details, or globally, in widespread areas. Multiple-site damage is widespread damage that occurs in a large structural element such as a single rivet line of a lap splice joining two large skin panels. Widespread damage can also occur in multiple elements such as adjacent frames or stringers. Multiple-site damage and multiple-element damage cracks are typically too small initially to be reliably detected with normal inspection methods. Without intervention, these cracks will grow, and eventually compromise the structural integrity of the airplane. This condition is known as widespread fatigue damage (WFD). It is associated with general degradation of large areas of structure with similar structural details and stress levels. As an airplane ages, WFD will likely occur, and will certainly occur if the airplane is operated long enough without any intervention.

An FAA final rule (“Aging Airplane Program: Widespread Fatigue Damage;” 75 FR 69746, November 15, 2010) became effective on January 14, 2011, and amended 14 CFR parts 25, 26, 121, and 129 (commonly known as the WFD rule). The WFD rule requires certain actions to prevent structural failure due to WFD throughout the operational life of certain existing transport category airplanes and all of these airplanes that will be certificated in the future. Design approval holders (DAHs) of existing and future airplanes subject to the WFD rule are required to establish a limit of validity (LOV) of the engineering data that support the structural maintenance program. Operators affected by the WFD rule may not fly an airplane beyond its LOV, unless an extended LOV is approved.

The WFD rule does not require identifying and developing maintenance actions if the DAHs can show that such actions are not necessary to prevent WFD before the airplane reaches the LOV. Many LOVs, however, do depend on accomplishment of future maintenance actions. As stated in the WFD rule, any maintenance actions necessary to reach the LOV will be mandated by airworthiness directives through separate rulemaking actions.

In the context of WFD, this action is necessary to enable DAHs to propose LOVs that allow operators the longest operational lives for their airplanes, and still ensure that WFD will not occur. This approach allows for an implementation strategy that provides flexibility to DAHs in determining the timing of service information development (with FAA approval), while providing operators with certainty regarding the LOV applicable to their airplanes.

The FAA issued AD 2017-23-02, Amendment 39-19096 (82 FR 52835, November 15, 2017) (AD 2017-23-02), for certain The Boeing Company Model 737-200, -200C, -300, -400, and -500 series airplanes. AD 2017-23-02 was prompted by an evaluation by the DAH indicating that the fuselage crown skin panels are subject to WFD. AD 2017-23-02 requires repetitive inspections, replacement, and applicable on-condition actions for certain fuselage crown skin panels. The agency issued AD 2017-23-02 to address cracking in the fuselage crown skin panels. Multiple adjacent cracks in the fuselage crown skin could link up and lead to decompression or loss of structural integrity of the airplane.

Actions Since AD 2017-23-02 Was Issued

Since the FAA issued AD 2017-23-02, errors were found in Boeing Alert Service Bulletin 737-53A1358, dated April 27, 2017, which is referenced in AD 2017-23-02. These errors include airplanes that are incorrectly identified as being in certain groups, and inspection figures that show incorrect chem-mill locations. Additional airplanes were

also identified as being subject to the unsafe condition. These errors affect operators' ability to comply with AD 2017-23-02, and the FAA determined that a supersedure was needed to require corrected service information.

FAA's Determination

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021. This service information specifies procedures for repetitive non-destructive inspections for cracking, replacement of certain fuselage crown skin panels, and applicable on-condition actions. On-condition actions include a general visual inspection of certain repairs for any loose or missing fasteners, a low frequency eddy current (LFEC) inspection of certain repairs for cracking, and repair. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Proposed AD Requirements in this NPRM

Although this proposed AD does not explicitly restate the requirements of AD 2017-23-02, this AD would retain all of the requirements of AD 2017-23-02. Those requirements are referenced in the service information identified previously, which, in turn, is referenced in paragraph (h) of this proposed AD. This proposed AD would revise certain airplane configurations and inspection locations, and add airplanes to the applicability. This proposed AD would also require accomplishment of the actions identified as "RC" (required for compliance) in the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021,

described previously, except for any differences identified as exceptions in the regulatory text of this proposed AD.

For information on the procedures and compliance times, see this service information at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0665.

Explanation of Proposed Compliance Time

The compliance time for the replacement specified in this proposed AD for addressing WFD was established to ensure that discrepant structure is replaced before WFD develops in airplanes. Standard inspection techniques cannot be relied on to detect WFD before it becomes a hazard to flight. The FAA will not grant any extensions of the compliance time to complete any AD-mandated service bulletin related to WFD without extensive new data that would substantiate and clearly warrant such an extension.

Explanation of Proposed Applicability

Model 737 airplanes having line numbers 1 through 291 have an LOV of 34,000 total flight cycles, and the actions proposed in this NPRM, as specified in Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021, would be required at a compliance time occurring after that LOV. Although operation of an airplane beyond its LOV is prohibited by 14 CFR 121.1115 and 129.115, this NPRM would include those airplanes in the applicability so that these airplanes are tracked in the event the LOV is extended in the future.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 143 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	Up to 507 work-hours X \$85 per hour = Up to \$43,095 per inspection cycle	\$0	Up to \$43,095 per inspection cycle	Up to \$6,162,585 per inspection cycle
Replacement	304 work-hours X \$85 per hour = \$25,840 per skin panel	\$95,000	\$120,840 per skin panel	\$17,280,120 per skin panel

The FAA estimates the following costs to do any necessary inspections that would be required based on the results of the proposed inspection. The FAA has no way of determining the number of aircraft that might need these inspections:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
LFEC inspection	1 work-hours X \$85 per hour = \$85	\$0	\$85
General visual inspection	1 work-hour X \$85 per hour = \$85	\$0	\$85

The FAA has received no definitive data on which to base the cost estimates for the on-condition repairs specified in this proposed AD.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA has determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

- a. Removing Airworthiness Directive (AD) 2017-23-02, Amendment 39-19096 (82 FR 52835, November 15, 2017), and
- b. Adding the following new AD:

The Boeing Company: Docket No. FAA-2021-0665; Project Identifier

AD-2021-00270-T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2017-23-02, Amendment 39-19096 (82 FR 52835, November 15, 2017) (AD 2017-23-02).

(c) Applicability

This AD applies to The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021.

(d) Subject

Air Transport Association (ATA) of America Code 53, Fuselage.

(e) Unsafe Condition

This AD was prompted by an evaluation by the design approval holder indicating that the fuselage crown skin panels are subject to widespread fatigue damage. This AD was also prompted by a determination that certain airplane configurations and inspection locations need to be revised, and that additional airplanes are subject to the unsafe condition. The FAA is issuing this AD to address cracking in the fuselage crown skin panels. Multiple adjacent cracks in the fuselage crown skin could link up and lead to decompression or loss of structural integrity of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Actions for Group 43 Airplanes

For airplanes identified as Group 43 in Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021, within 120 days after the effective date of this AD, inspect the airplane and do all applicable on-condition actions using a method approved in accordance with the procedures specified in paragraph (j) of this AD

(h) Required Actions for Groups 1 through 42 Airplanes

For airplanes identified as Groups 1 through 42 in Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021, except as specified by paragraph (i) of this AD: At the applicable times specified in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021, do all applicable actions identified as “RC” (required for compliance) in, and in accordance with, the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021. Actions identified as terminating action in Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021, terminate the applicable required actions of this AD, provided the terminating action is done in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021.

(i) Exceptions to Service Information Specifications

(1) Where Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021, uses the phrase “the original issue date of this service bulletin,” this AD requires using “December 20, 2017” (the effective date of AD 2017-23-02).

(2) Where Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021, specifies contacting Boeing for repair instructions or for work instructions, this AD requires doing the repair, or doing the work instructions and applicable on-condition actions using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

(3) Part 7 of Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021, specifies post-modification airworthiness limitation inspections in compliance with 14 CFR 25.571(a)(3) at the modified locations to support compliance with 14 CFR 121.1109(c)(2) or 129.109(b)(2). Although Part 7 is identified as RC, this AD does not require accomplishment of Part 7. As airworthiness limitations, these inspections are required by maintenance and operational rules. It is, therefore, unnecessary to mandate them in this AD. Deviations from these inspections require FAA approval, but do not require an alternative method of compliance.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. Information may be emailed to:
9-ANM-LAACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) AMOCs approved for AD 2017-23-02 are approved as AMOCs for the corresponding provisions of Boeing Alert Service Bulletin 737-53A1358, Revision 1, dated February 26, 2021, that are required by paragraph (h) of this AD.

(5) Except as specified by paragraph (i)(2) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (j)(5)(i) and (ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled “RC Exempt,” then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator’s maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(k) Related Information

(1) For more information about this AD, contact James Guo, Aerospace Engineer, Airframe Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5357; fax: 562-627-5210; email: james.guo@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St.,

Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued on August 7, 2021.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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